



Attorney Docket No.: 0492611-0543/MIT9277 CONI

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Seleznev, *et al*

Examiner: Cooke

Serial No.: 10/799,436

Art Unit: 1751

Filing Date: March 12, 2004

Title: VACUUM PROCESSING FOR FABRICATION OF SUPERCONDUCTING THIN FILMS FABRICATED BY METAL-ORGANIC PROCESSING

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

DECLARATION UNDER 37 C.F.R. 1.131

I, Michael J. Cima, Ph.D., declare as follows:

1. I am an inventor of the subject matter disclosed and claimed in United States Patent Application Serial No. 10/799,436, filed March 12, 2004 ("the '436 application"), and entitled "Vacuum Processing For Fabrication Of Superconducting Thin Films Fabricated By Metal-Organic Processing". This application claims priority to U.S. Patent Application No. 10/194,561 ("the '561 application") filed July 13, 2002, and to United States provisional patent application Serial No. 60/305,407, filed on July 13, 2001.

2. This Declaration is presented for the purpose of removing from consideration by the Examiner a paper by Solovyov, et al., entitled "*Ex-situ* Post-deposition Processing for Large Area $Y_1Ba_2Cu_3O_7$ Films and Coated Tapes", IEEE Transactions on Applied Superconductivity, 11(1) 2939-2942 (2001) (hereinafter, "Solovyov"). The paper first became available to the public on April 24, 2001. The present Declaration is presented in accordance with In re Stompel, 113 U.S.P.Q. 77 (CCPA 1957) and establishes conception and reduction to practice of the invention in this country before April 24, 2001.

3. While Solovyov bears notations indicating that it was published in March, 2001, I understand, as a result of reviewing the Declaration under 37 C.F.R. § 1.132 of Valarie Rosen, that Solovyov was first published on April 24, 2001.

4. The inventors of the claimed subject matter of the '436 application are Igor Seleznev and Michael J. Cima.

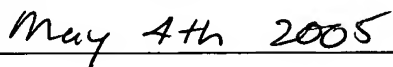
5. On a date before April 24, 2001, Igor Seleznev and I conceived and reduced to practice our invention of a method for vacuum processing for fabrication of superconducting thin films fabricated by metal-organic processing.

6. Exhibit 1 is a copy of pages 68-69 from the laboratory notebook of Igor Seleznev, with dates blacked out. Exhibit 1 provides evidence of conception and actual reduction to practice of the claimed invention prior to April 24, 2001. In particular, page 68 includes a description of the conversion of a metal oxyfluoride film in a processing gas having a total pressure less than atmospheric pressure. Page 68 has four photomicrographs of a sample prepared using the techniques of the invention. Four copies are included to show each of the photomicrographs. Page 69 is an x-ray diffraction spectrum showing the presence of an oxide superconductor in a sample prepared using the techniques described on page 68. The notes were prepared in the United States of America. The originals of these two pages bear dates prior to April 24, 2001.

7. All statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful, false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful, false statements may jeopardize the validity of the application or any patents issued thereon.

A handwritten signature in cursive script, appearing to read "Michael J. Cima", written over a horizontal line.

Michael J. Cima, Ph.D.

A handwritten date "May 4th 2005" written in cursive script over a horizontal line.

Date

Exhibit 1

Student's Name

Date

b8

Subject

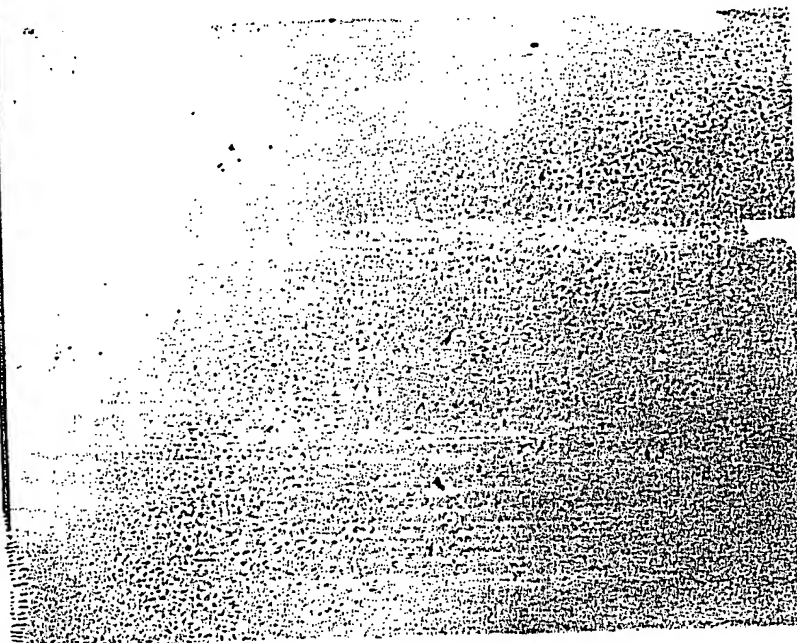
Instructor's Name

Pictures of the sample
prepared in vacuum at 80 Torr.

Water was introduced after 10
minutes ~~period~~ of heating segment
at controller at approx 400°C
in the furnace.



75X NIS 11229 #2 vacuum
from 0.1 m. pressure
at 400°C



750X vacuum #1 NIS 11229 #2

sample was made at 725°C, 80 Torr
total pressure, 1000 ppm of O₂

18-25 minutes at 400°C

Best Available Copy

Student's Name

Date

68

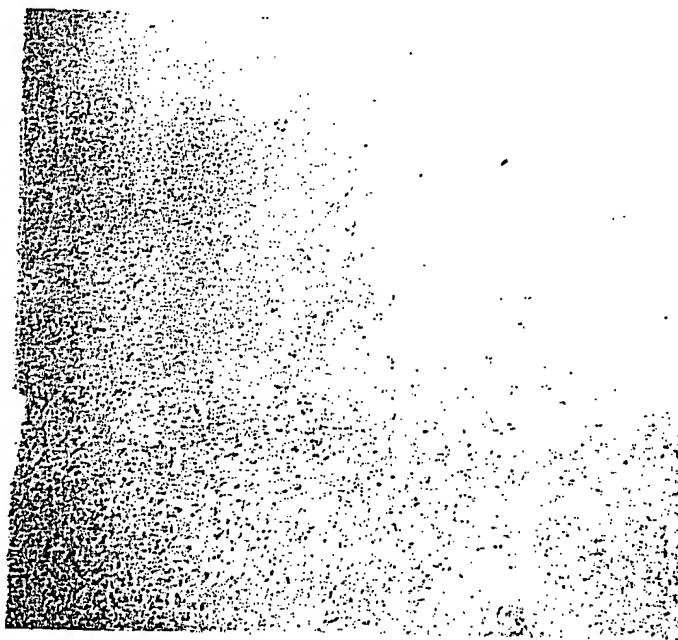
Subject

Instructor's Name

Pictures of the sample prepared in vacuum at 80 torrs.

Water was introduced after 10 minutes ~~prior~~ of heating segment at controller at approx 400°C in the furnace.

150X NG 11229 #1
[10] → part of a curved surface



750X vacuum #1 NG 11229 #2

sample was made at 725°C, 80 torrs
total pressure, 1000 ppm conc of O₂

18-25 minutes at 400°C

Best Available Copy

Student's Name

Date

68

Subject

Instructor's Name

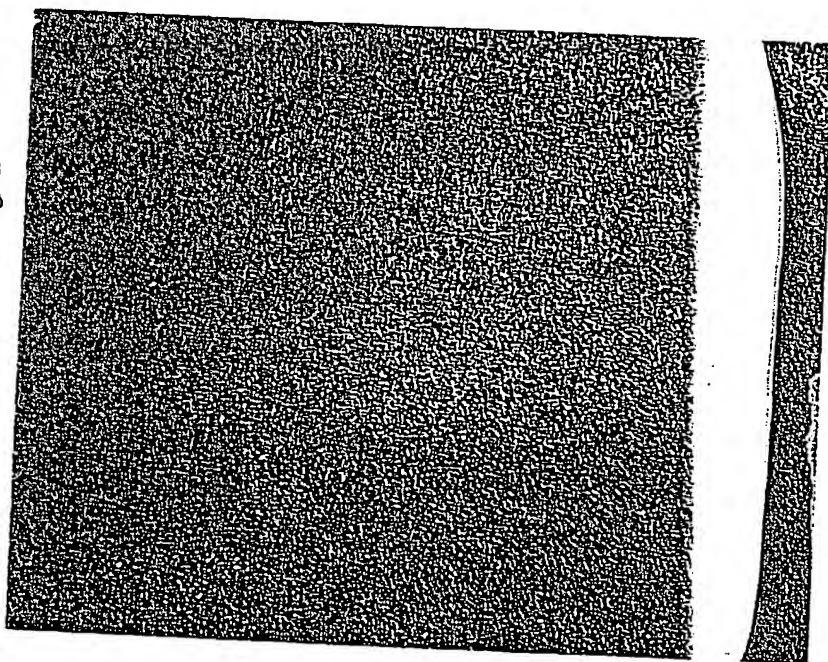
Pictures of the sample prepared in vacuum at 80 Torr/s.

Water was introduced after 10 minutes ~~end~~ of heating segment at controller at approx 400°C in the furnace.

Alloy 11229 #2

750 X Vacuum #1

750 X Vacuum #1



750X Vacuum #1 NG 11229 #2

Sample was made at 725 °C, 80 Torr/s
total pressure, 1000 ppm, and of O₂.

18-25 minutes at 400°C

Student's Name

Date

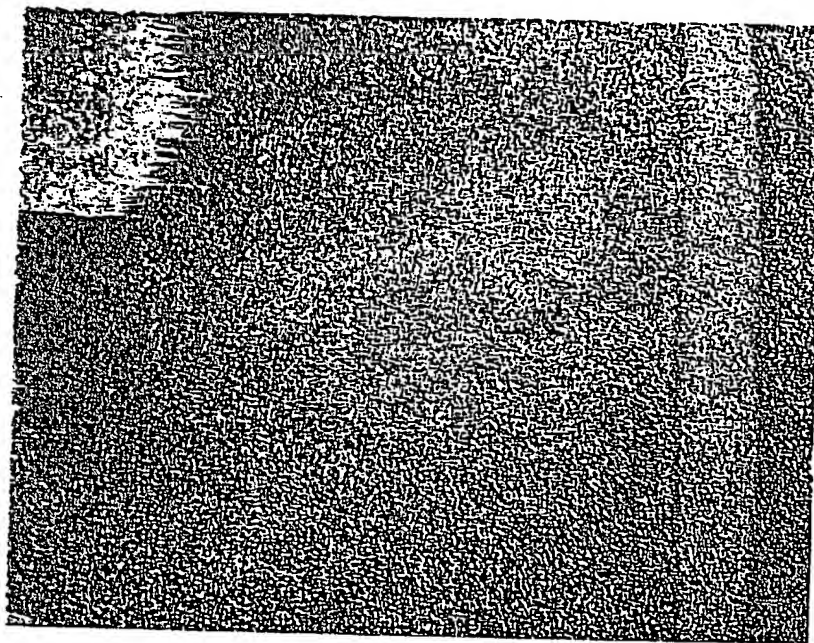
68

Subject

Instructor's Name

Pictures of the sample prepared in vacuum at 80 Torr/s.

Water was introduced after 10 minutes ~~prior~~ of heating segment at controller at approx 400°C in the furnace.



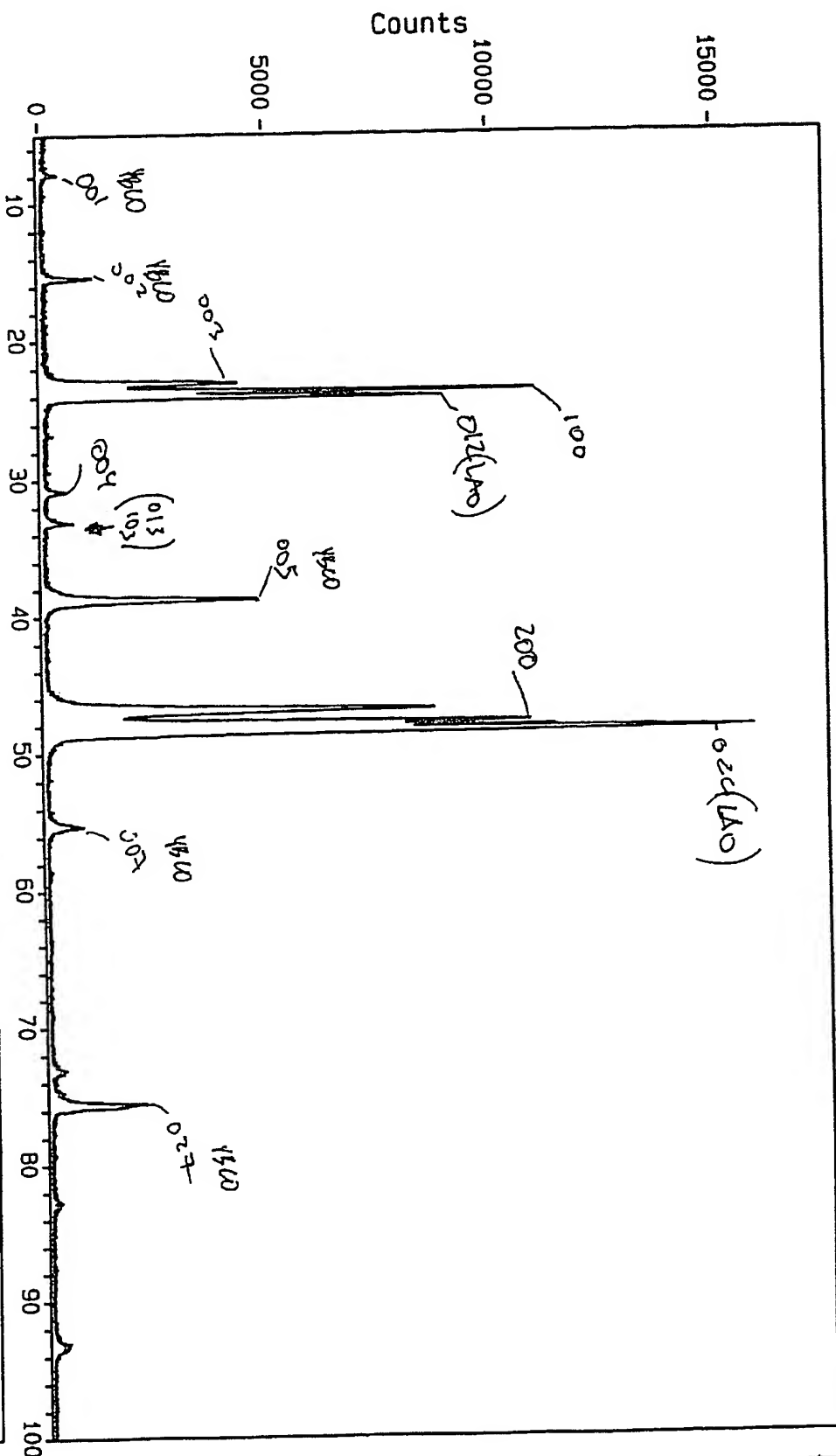
750X VACUUM \pm 1 MG 11221#2.

sample was made at 725°C, 80 Torr/s
total pressure, 1000 pps tank of O₂.

18-25 minutes at \pm

Z\DATA\

ID: L020700#4 VACUUM_3 50_MINUTES, 09:51
File: Z05523.RAW Scan: 5-100/.02/ 1/#4751, Anode: CU



1> 39-0486: Ba2Cu3Y06.8 - Barium Copper Yttrium Oxide

2> 31-0022: LaAlO3 - Aluminum Lanthanum Oxide